EXHIBIT G

United States District Court
Eastern District of New York

1:19-cv-00768-BMC

Lashawn Sharpe, individually and on behalf of all others similarly situated

Plaintiff

- against -

A & W Concentrate Company and Keurig Dr Pepper Inc.

Defendant

Expert Report of
Dr. Daphna Havkin-Frenkel

I. INTRODUCTION AND PURPOSE

1. I have been engaged as an expert by Plaintiff's counsel in this case.

2. I provide this report in connection with the case filed by Plaintiff against Defendants A& W Concentrate Company and Keurig Doctor Pepper ("Defendants").

3. I have been advised by counsel for Plaintiffs that individuals purchased Defendants' A&W Root Beer and A&W Cream Soda beverages ("Products") believing the vanilla flavoring came from real vanilla and was aged vanilla.

4. I have been further advised that Plaintiffs allege these claims are false, misleading, and/or deceptive to a reasonable consumer because the vanilla flavoring of the products is, in part, not from real vanilla.

5. Counsel for Plaintiffs asked me to provide an expert opinion on: (1) the source of the vanilla flavor of the Products, (2) the presence of flavor compounds obtained from real vanilla beans in the Products and (3) whether the claim "Made With Aged Vanilla" ("Challenged Claim") is truthful or not:[1]

[1] See complaint (ECF No. 1) (hereafter "the Complaint"), paragraph 14.

6. It is my opinion that the source of the vanilla flavor in the Products is not from vanilla.

7. It is my opinion that the presence of vanilla obtained from vanilla beans in the Products is not present and if it is present, it is at miniscule levels.

8. It is my opinion the claim "Made With Aged Vanilla" is untrue.

9. My opinions are based on my experience and training as well as the case-specific materials I have reviewed, summarized in Exhibit 3 and cited throughout this Report.

10. Plaintiff's Counsel are compensating me for my time at my standard hourly rate of $250.00, plus direct costs.

11. My compensation is not dependent on the opinions I express or on the outcome of the case.

II. QUALIFICATIONS[2]

12. I am the General Manager of Bakto Flavors LLC.

13. Bakto Flavors is a company specializing in the production and marketing of vanilla products and other natural flavors and extracts, to consumers and businesses.

14. I am also a visiting research scientist in the Department of Plant Biology, Rutgers, the State University of New Jersey ("Rutgers").

15. The research program at Rutgers focuses on analyzing the biosynthetic pathway of vanillin in vanilla beans and microorganisms, in addition to examination of the curing process, post-harvest handling and green house cultivation of vanilla beans.

16. I have authored numerous articles on vanilla in peer reviewed scientific journals and

[2] See Exhibit 1 for my curriculum vitae, published works, and speeches and Exhibit 2 for my testimony experience.

the trade press (i.e., Perfumer & Flavorist).

17. I am the editor, with F.C. Belanger, of the Handbook of Vanilla Science and Technology (2017) and Biotechnology in Flavor Production (2016), published by Wiley-Blackwell and Blackwell Publishing, respectively.

18. While my formal academic training is in the sciences, I have experience in the flavor industry in various capacities, as a flavor chemist.

19. This industry experience in addition to my academic training have provided me the knowledge of what particular compounds are used in the flavor industry to create or simulate flavors typically associated with various food and beverage products.

20. Plaintiff's Counsel stated they had filed the present action and requested my opinion with respect to the truthfulness of the Claims.

21. I am aware that Plaintiff's Counsel commissioned a GC-MS analysis of the Products by Alliance Technology Group ("Alliance Tech"), in Monmouth Junction, New Jersey.

22. On August 27, 2019, Alliance Tech provided Plaintiff's Counsel and me their report, "Analysis of A&W Root Beer and Cream Soda for Vanilla Flavors by GCMS / R20190173" ("Alliance Tech Report").

III. Application of Gas Chromatography–Mass Spectrometry ("GC-MS") to Samples

23. GC-MS is an analytical method that combines the features of gas-chromatography and mass spectrometry to identify different substances within a test sample.

24. The gas chromatograph separates components in a mixture into individual molecules, using a capillary column with certain length, thickness and defined properties of a stationary phase.

25. The mixture components are injected into and travel through the column being eluted at different times ("retention time"), shown on the x-axis.

26. The y-axis measures the amount or "intensity" of the specific compounds in the sample.

27. The elution of the compounds is plotted against their peaks in a chromatogram, a graph used to display scientific results obtained through gas chromatography.

28. As the molecules are eluted, they are captured by the mass spectrometer.

29. The molecules are broken down into ionized fragments and their mass-to-charge ("M/Z") ratio is calculated.

30. The M/Z ratio is similar to a fingerprint of the molecules, which is compared against the M/Z ratios for all other known compounds to obtain a match.

31. Each compound is identified by a peak, and the relative area covered by a peak is proportional to its amount in the sample.

32. The Alliance Tech Report presents chromatograms for the Root Beer and Cream Soda Products.

33. The compounds detected are identified in the "Name" column, with their relative proportions shown in the "Area%" column.

IV. GC-MS FAILS TO REVEAL MARKERS FOR NATURAL VANILLA

34. The four (4) major chemicals found in vanilla beans which are common markers for real vanilla are identified in the table below, in the proportions indicated.

Chemicals	Percent Present in Vanilla Beans
vanillin	1.3-1.7 %
p-hydroxybenzaldehde	0.1%
vanillic acid	0.05%
p-hydroxybenzoic acid	0.03%

35. While vanillin is the chemical most associated with natural vanilla, most of this

compound used in food and beverage products is not obtained from vanilla beans.

36. Artificial processes transform natural source material such as clove oil and ferulic acid into most vanillin used today.

37. Based on my experience in the flavor industry, I am aware that vanillin from non-vanilla bean natural sources is frequently used to simulate the taste and flavor of vanillin which is obtained from vanilla beans.

38. Due to the similar chemical profiles of vanillin from vanilla beans compared to vanillin derived from non-vanilla bean, natural sources, the presence or absence of the three (3) other chemicals is relevant to my conclusions.

V. SUMMARY OF CONCLUSIONS

A. None of the Four Vanilla Markers are Detected in the Root Beer Products

39. The Peak Report TIC and chromatogram for the Root Beer Products fails to indicate the presence of any of the four (4) chemicals which are common markers for vanilla. *See* Alliance Tech Report, pp. 4-5.

40. To the extent the Root Beer Products may taste similar to the flavor imparted by vanilla beans, this is likely due to the presence and relative amount of ethyl vanillin, covering an area of 0.71%. *See* Alliance Tech Report, p. 5, Row 15, Column 4.

B. The Cream Soda Products Reveal Vanillin, Though the Absence of Three Other Markers Raises Questions as to the Vanillin Source Material

41. In contrast to the Root Beer, the Peak Report TIC and chromatogram for the Cream Soda Products reveal the presence of vanillin. See Alliance Tech Report, p. 6.

42. However, the data show no detection of the other three markers for real vanilla – p-

hydroxybenzaldehyde, p-hydroxybenzoic acid and vanillic acid.

43. I next sought to consider whether the vanillin detected is likely to be from natural vanilla.

44. The proportion of ethyl vanillin in the Cream Soda Products is more than ten (10) times the vanillin content, based on the relative area covered by their respective peaks – 4.61% to 0.29%. *See* Alliance Tech Report, p. 6, Rows 7-8, Column 4.

45. In light of the relative amounts of vanillin and ethyl vanillin, I reviewed the Krueger Report and Exhibits. *See* Document 2, Report of Dana Krueger, August 1, 2019; Document 3, Exhibit 1 to Report of Dana Krueger, Givaudan, Product Information Material Disclosure, May 20, 2019; and Document 4, Exhibit 2 to Report of Dana Krueger, Firmenich Flavours, Product Description PD PD C28104-1.1EN, 2-Fold Vanilla Extract and Ingredient Breakdown, April 30, 2009.

46. The Krueger Report is partially based on the vanilla flavor ingredient provided to Mr. Krueger for analysis.

47. Though I have not been provided the vanilla flavor ingredient for analysis, Mr. Krueger indicated this was the "Vanilla Flavor WONF" identified in the Product Information Material Disclosure. See Krueger Report, p. 4 and Exhibit 1 to Krueger Report.

48. Mr. Kruger noted that the vanilla flavor ingredient "has been fortified with added vanillin." See Krueger Report, p. 5.

49. When vanillin is added to "spike" or fortify a vanilla flavor, the vanillin used is not obtained from vanilla beans, but from non-vanilla bean source material identified above.

50. This may explain why the Peak Report for the Cream Soda Products reveals the presence of vanillin yet fails to detect any amount of p-hydroxybenzaldehyde, p-hydroxybenzoic

acid or vanillic acid.

C. The "Aged Vanilla" Claim Conflicts with the Analysis and the Kramer Report

51. The only reference to the "Aged Vanilla" Claim, other than in the Complaint, is in the Report of Steven Kramer, August 1, 2019 ("Kramer Report"), which states:

> A&W Root Beer and A&W Cream Soda contain aged vanilla, which is another way of saying natural vanilla, which is used as a flavoring in the form of vanilla extract. The vanilla flavor of vanilla beans is optimized by aging the green beans directly after they are picked.
>
> Kramer Report, p. 2.

52. However, this "aging" of green vanilla beans (over 3 to 6 months) refers to the standard "curing" process, a series of steps during which complex chemical reactions occur within the pods to release their flavor.

53. The first step, "killing," entails the submersion of the beans in scalding water to stop their vegetative growth and stimulate enzymatic reactions responsible for the vanilla aroma.

54. In the intermediate steps, the vanilla beans spend nights in "sweat boxes" and days spread in the sun.

55. The final conditioning step consists of storage of the vanilla beans in closed boxes to develop their flavor.

56. What is known as "aged vanilla" or "aging" of vanilla, as known in the trade, refers not to the standard curing steps, but to the process whereby after the vanilla flavor has been extracted from vanilla beans to form the liquid known as vanilla extract, it is aged for a finite period of time – often no less than three (3) months – in wooden barrels or casks.

57. During this aging period, the alcohol interacts with the wooden particulates, enhancing the flavor of the vanilla.

58. The aging process smooths out the complex vanilla flavors and increases the intensity of the flavors, resulting in a more expensive, higher quality and more valuable product.

59. It is my opinion that the Alliance Tech Report does not indicate the presence of vanilla, such that they cannot contain "Aged Vanilla."

60. Even if the Products contained markers for natural vanilla, they would still not contain "Aged Vanilla."

61. This is because (i) the definition for this term supplied by the Kramer Report does not distinguish "Aged Vanilla" from standard vanilla made through the typical processes and (ii) "Aged Vanilla" often has a specific meaning and connotation relating to the vanilla extract's storage in barrels or casks.

VI. **RESERVATION OF RIGHTS**

62. I understand that discovery in this case is ongoing.

63. I may amend or supplement my opinions to take into account facts developed in the discovery process.

Dated: September 19, 2019

Respectfully submitted,

Daphna Havkin-Frenkel, Ph.D.

Exhibit 1

Analysis of A&W Root Beer and Cream Soda for Vanilla Flavors by GCMS / R20190173

Prepared for:
Spencer & Associates, P.C.
Great Neck, NY

August 27, 2019

ALLIANCE TECHNOLOGIES
CHEMICAL & MATERIAL TESTING LABORATORIES
www.alliancetechgroup.com
info@alliancetechgroup.com
732.355.1234 (ph)

ALLIANCE TECHNOLOGIES
CHEMICAL & MATERIAL TESTING LABORATORIES

www.alliancetechgroup.com
9 Deer Park Drive ~ Suite B
Monmouth Jct., NJ 08852
info@alliancetechgroup.com

Client & Sample Information

Client:	Sheehan & Associates, P.C. 505 Northern Blvd. Suite 311 Great Neck, NY 11021
Requestor:	Spencer Sheehan
Study:	Analysis of A&W Root Beer and Cream Soda for Vanilla Flavors by GCMS
LIMS #:	20190173

Two (2) soda samples were purchased from Giant Food Stores on August 11, 2019 and analysed by Gas Chromatography-Mass Spectrometry (GC-MS) to assay for vanilla flavors (Vanillin and Ethyl Vanillin). The samples were designated as follows in the laboratory information management system (LIMS, Table I) and stored at room temperature in their original containers until being prepared for analysis.

Table I: Sample Designations

LIMS #	Client ID	
20190173-01	A&W Root Beer 7.5 FL OZ Can	
20190173-02	A&W Cream Soda 2 Liter Bottle	 

ALLIANCE TECHNOLOGIES
CHEMICAL & MATERIAL TESTING LABORATORIES

www.alliancetechgroup.com
9 Deer Park Drive ~ Suite B
Monmouth Jct., NJ 08852
info@alliancetechgroup.com

Summary

The chromatograms and peak tables for Samples 20190173-01 (A&W Root Beer) and 20190173-02 (A&W Cream Soda) are shown in Figures 1 and 2, respectively. Chemical matches for each peak were tabulated from mass-spectral library searches. Ethyl vanillin was detected in Sample 20190173-01 (A&W Root Beer). Vanillin and Ethyl Vanillin were detected in Sample 20190173-02 (A&W Cream Soda).

Experimental

A 40 mL aliquot of each soda sample was placed in a 50 mL centrifuge tube. The samples were spiked with 400µg of naphthalene-d8, which was used as an internal standard (IS) for the analysis. A total of 5 mL of Dichloromethane (DCM) was added to the samples. Each sample was centrifuged for 30 minutes at 2500-3000 rpm. The dichloromethane layer was isolated and transferred to a conical flask. The DCM extracts were then concentrated using a stream of dry nitrogen gas. Sample 20190173-01 was concentrated down to 0.2 mL and Sample 20190173-02 was concentrated down to 1 mL. The extracts were then placed in autosampler vials for analysis by GCMS.

The samples were analyzed on a Shimadzu QP2010SE GC equipped with a Supelco Equity-5 column (30m x 0.25mm x 1.0um). The oven program heated the samples from 50°C to 260°C at a ramp rate of 10°C/min. Helium was used as the carrier gas at a constant pressure of 20 psi. The MS detector was scanned from 35 to 350 m/z during analysis.

www.alliancetechgroup.com
9 Deer Park Drive ~ Suite B
Monmouth Jct., NJ 08852
info@alliancetechgroup.com

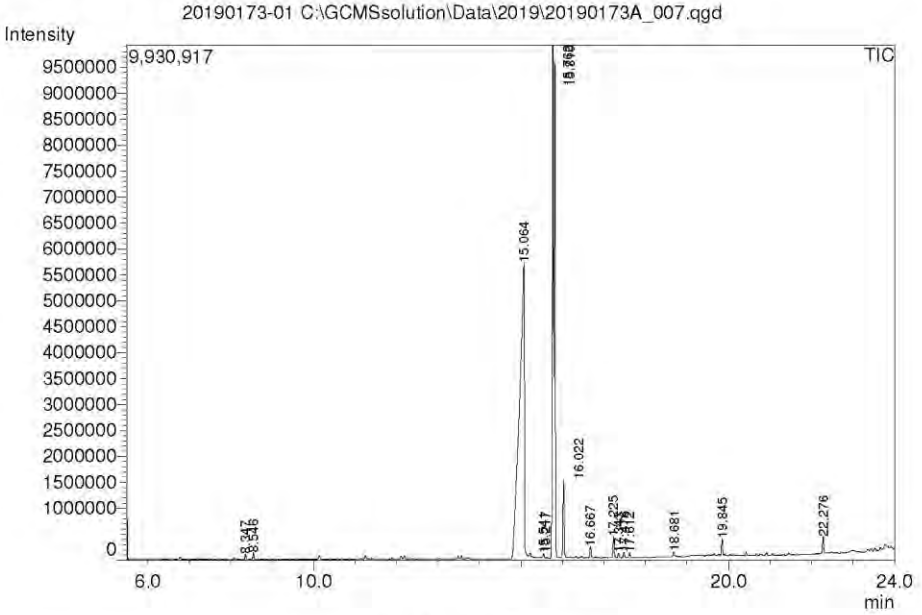
Figure 1: Chromatogram and Peak Table for Sample 20190173-01 (A&W Root Beer 7.5 FL OZ Can)

Alliance Technologies, LLC
9 Deer Park Dr. Suite B
Monmouth Jct., NJ 08852
www.alliancetechgroup.com

Sample Information

Analyzed by	: Admin
Analyzed	: 8/22/2019 3:38:16 PM
Sample Name	: 20190173-01
Sample ID	: Root Beer
Tray	: Tray2
Vial #	: 3
Inj. Volume	: 1
Data File	: C:\GCMSsolution\Data\2019\20190173A_007.qgd
Method File	: C:\GCMSsolution\Data\Project1\Methods\Equity5_Vanillin_Assay.qgm
Tuning File	: C:\GCMSsolution\System\Tune1\Tuning Report 21Aug2019.qgt

20190173-01 C:\GCMSsolution\Data\2019\20190173A_007.qgd



Peak Report TIC

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
1	8.347	172206	0.19	95213	0.33	96.00	Furfural
2	8.546	245162	0.27	126050	0.44	43.05	2,4-Dimethyl-1-heptene
3	15.064	46182658	50.86	5686044	19.82	105.00	Benzoic Acid
4	15.217	200568	0.22	82447	0.29	112.10	1,2,3,4-Tetrahydronaphthalene-d12
5	15.541	157493	0.17	82646	0.29	57.05	Dodecane
6	15.762	20026708	22.05	9888686	34.48	136.10	Naphthalene-d8
7	15.810	17766481	19.56	9573681	33.38	120.00	Methyl Salicylate
8	16.022	2818866	3.10	1497074	5.22	97.00	2-Furancarboxaldehyde, 5-(hydroxymeth
9	16.667	422503	0.47	213307	0.74	175.10	Benzene, 1,3-bis(1,1-dimethylethyl)-
10	17.225	769495	0.85	405526	1.41	148.05	Benzene, 1-methoxy-4-(1-propenyl)-
11	17.343	202010	0.22	90421	0.32	43.05	Isotridecanol-
12	17.476	249815	0.28	109942	0.38	43.05	1-Undecene, 7-methyl-
13	17.612	177347	0.20	93524	0.33	43.05	1-Undecene, 7-methyl- (CAS)
14	18.681	177336	0.20	93018	0.32	57.05	Hexadecane

C:\GCMSsolution\Data\2019\20190173A_007.qgd 1 / 19

www.alliancetechgroup.com
9 Deer Park Drive ~ Suite B
Monmouth Jct., NJ 08852
info@alliancetechgroup.com

Figure 1, Cont'd: Chromatogram and Peak Table for Sample 20190173-01 (A&W Root Beer 7.5 FL OZ Can)

Alliance Technologies, LLC
9 Deer Park Dr. Suite B
Monmouth Jct., NJ 08852
www.alliancetechgroup.com

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
15	19.845	640212	0.71	328810	1.15	137.00	Ethyl Vanillin
16	22.276	600626	0.66	316055	1.10	157.00	Ethyl citrate
		90809486	100.00	28682444	100.00		

C:\GCMSsolution\Data\2019\20190173A_007.qgd 2 / 19

ALLIANCE TECHNOLOGIES
CHEMICAL & MATERIAL TESTING LABORATORIES

www.alliancetechgroup.com
9 Deer Park Drive ~ Suite B
Monmouth Jct., NJ 08852
info@alliancetechgroup.com

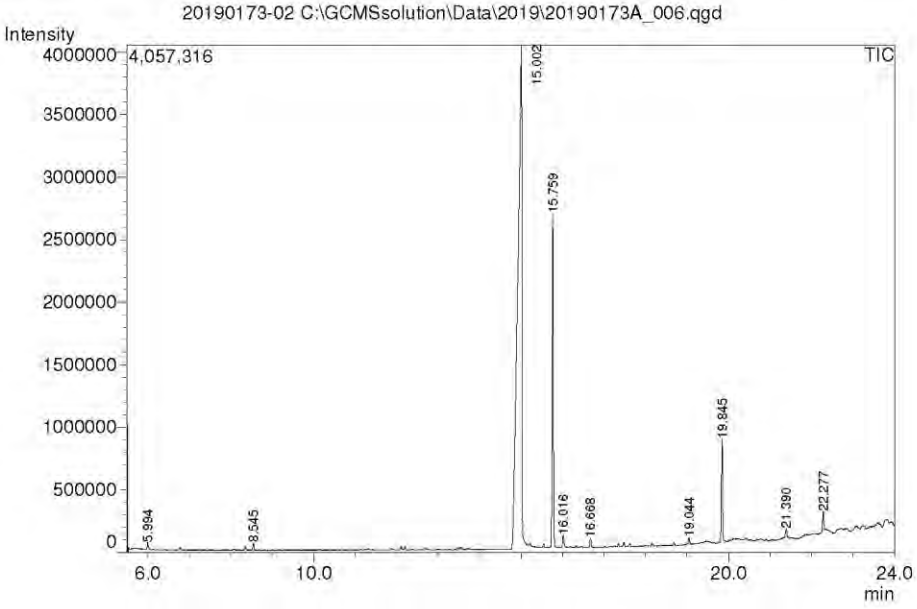
Figure 2: Chromatogram and Peak Table for Sample 20190173-02 (A&W Cream Soda 2 Liter Bottle)

Alliance Technologies, LLC
9 Deer Park Dr. Suite B
Monmouth Jct., NJ 08852
www.alliancetechgroup.com

Sample Information

Analyzed by	: Admin
Analyzed	: 8/22/2019 2:59:23 PM
Sample Name	: 20190173-02
Sample ID	: Cream soda
Tray	: Tray2
Vial #	: 4
Inj. Volume	: 1
Data File	: C:\GCMSsolution\Data\2019\20190173A_006.qgd
Method File	: C:\GCMSsolution\Data\Project1\Methods\Equity5_Vanillin_Assay.qgm
Tuning File	: C:\GCMSsolution\System\Tune1\Tuning Report 21Aug2019.qgt

20190173-02 C:\GCMSsolution\Data\2019\20190173A_006.qgd



Peak Report TIC

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
1	5.994	96103	0.28	53312	0.66	45.05	1,2-Propanediol (CAS) Propylene glycol
2	8.545	115636	0.33	58422	0.72	43.05	2,4-Dimethyl-1-heptene
3	15.002	26803461	77.00	4021459	49.80	105.00	Benzoic Acid
4	15.759	5288075	15.19	2667433	33.03	136.10	Naphthalene-d8
5	16.016	186671	0.54	97072	1.20	97.00	2-Furancarboxaldehyde, 5-(hydroxymeth
6	16.668	138816	0.40	70797	0.88	175.10	Benzene, 1,3-bis(1,1-dimethylethyl)-
7	19.044	101386	0.29	51762	0.64	152.05	Vanillin
8	19.845	1605607	4.61	821484	10.17	137.00	Ethyl Vanillin
9	21.390	147339	0.42	73698	0.91	120.05	2H-1-Benzopyran-2-one, 3,4-dihydro-
10	22.277	327623	0.94	159132	1.97	157.05	Ethyl citrate
		34810717	100.00	8074571	100.00		

C:\GCMSsolution\Data\2019\20190173A_006.qgd 1 / 12

Exhibit 2

REPORT OF DANA KRUEGER

I am the president of Krueger Food Laboratories, Inc., an independent food analysis laboratory. My expert qualifications and a copy of my curriculum vitae are attached as **Appendix B**. I was asked by Creighton Magid of Dorsey & Whitney to assess whether the soft drink products A&W Root Beer and A&W Cream Soda contain natural vanilla as an ingredient.

As part of this work, I tested cans of A&W Root Beer and A&W Cream Soda for the presence of substances indicative of the presence of natural vanilla. I also tested samples of what I was informed were flavor ingredients for A&W Root Beer and A&W Cream Soda for the presence of substances indicative of the presence of natural vanilla. In addition, I reviewed a May 24, 2019, letter from Spencer Sheehan to Judge Brian M. Cogan and the attachments to that letter.

From the data obtained from my analyses and from the information provided regarding the formulation of A&W Root Beer and A&W Cream Soda, it is my opinion that both products contain natural vanilla.

My first approach in attempting to assess whether A&W Root Beer and A&W Cream Soda contain natural vanilla involved high performance liquid chromatography (HPLC) analysis of samples of the two beverages with the objective of determining the presence or absence of substances indicative of the presence of natural vanilla in the products. These substances include vanillin and hydroxybenzaldehyde.

I purchased 2 liter bottles of A&W Root Beer and A&W Cream Soda from a local supermarket. The A&W Root Beer sample had a production code of 01619 PW 18:47P. The A&W Cream Soda sample had a production code of 05919 PW 07:52P. Both products had labels that said "Made with Aged Vanilla".

HPLC analysis (AOAC 2019) of the products directly, without sample extraction or

concentration, yielded no significant peaks attributable to vanillin or hydroxybenzaldehyde. This result was not unexpected, as the quantity of vanilla substances in the products might well be below the limit of detection of the method, in the absence of any sample pre-concentration.

A second analysis was performed on the samples, performing a preliminary sample pre-concentration. 500 mL of each sample was extracted with a mixture of ethyl acetate and hexane, followed be evaporation of the solvent and taking up of the residue in 10 mL of acetonitrile. This produced an analytical sample which was approximately 50 times concentrated, relative to the starting beverage samples. HPLC analysis of these extracts proved troublesome. The chromatograms were obscured by large interfering peaks, probably from benzoic acid derived from the sodium benzoate preservative, as well as possibly from methyl salicylate in the root beer sample. I concluded that these HPLC analyses of the finished products were ineffective for the purpose of assessing the issue of whether or not the products contained substances indicative of the presence of natural vanilla.

I also reviewed the report by Thomas Hartman, dated April 17, 2019. Dr. Hartman tested samples of A&W Root Beer and A&W Cream Soda. He utilized a general purpose approach for flavor analysis called capillary gas-chomatography mass spectrometry (GC-MS) for the testing. Dr. Hartman found traces of vanillin in the A&W Cream Soda product. He did not report finding any other substances indicative of vanilla in his analysis. Dr. Hartman did not report finding vanillin or any other substances indicative of vanilla in his analysis of the A&W Root Beer product. Dr. Hartman did not report any selective ion chromatogram data.

In my opinion, the results of Dr. Hartman's analyses are inconclusive. The finding of vanillin in the A&W Cream Soda is consistent with the use of natural vanilla as an ingredient in the product, although the vanillin could also possibly derive from another source. The level of

vanillin found was near the limit of detection in his analysis; since the other substances indicative of vanilla would likely be present in significantly lower concentrations, it is likely that, if they are present in the product, they are below Dr. Hartman's limit of detection. In the case of the A&W Root Beer, it would appear that all of the substances indicative of vanilla, including vanillin, were below Dr. Hartman's limit of detection. In my opinion, on the basis of Dr. Hartman's data, while it might be possible to estimate a maximum limit of how much vanilla might be present in the products, it is not possible of draw a definite conclusion as to the presence or absence of natural vanilla in the product. If Dr. Hartman had produced some selected ion chromatograms, it might have been possible detect substances indicative of vanilla at lower concentrations than was possible with his total ion chromatogram approach. I concluded that the GC-MS analyses of the finished products performed by Dr. Hartman were ineffective for the purpose of assessing the issue of whether or not the products contained substances indicative of the presence of natural vanilla. The data in his report is ultimately inconclusive.

I also reviewed the email exchange between Daphna Havkin-Frenkel and Spencer Sheehan. In that exchange, she expressed a similar opinion to mine as to the analytical approach for establishing the presence of vanilla in the A&W beverage products. Specifically, she indicated that she expected that if the products contained vanilla, they would contain the substances indicative of the presence of vanilla: vanillin, hydroxybenzaldehyde, vanillic acid and hydroxybenzoic acid.

After apparently reviewing data from the Thomas Hartman GC-MS report, Dr. Havkin-Frenkel initially concluded that the beverage products contained no substances indicative of the presence of vanilla, and therefore did not contain vanilla. She subsequently backtracked that

opinion and indicated that the samples either contained no vanilla or that they contained only a very small quantity of vanilla. Dr. Havkin-Frenkel's amended opinion is essentially identical to my opinion above, based on my HPLC analyses and my review of Dr. Hartman's report. She concludes that the concentration in the products of substances indicative of the presence of vanilla were below what the Hartman report could detect, and that therefore the results were inconclusive as to the presence or absence of vanilla in the products. She could only conclude that, if present, the vanilla concentrations in the products would be small, something that would be expected in products of this type.

In view of the difficulties encountered in analysis of the finished beverage products, I subsequently proposed analysis of the vanilla extract-containing flavor ingredients that were used in the formulations for these two products. HPLC analysis of these materials might more easily show the presence of the substances that would be expected in vanilla extract, including the previously mentioned vanillin, hydroxybenzaldehyde, vanillic acid and hydroxybenzoic acid.

A sample was provided to me of a vanilla flavor ingredient that was represented to me as being one of the ingredients in the formulation of A&W Root Beer. The ingredient was identified as 20032412 Lot 119212 Batch 389475 Vanilla Extract 2X. HPLC analysis of this sample yielded the results in Table 1. In my opinion, the results obtained for this ingredient are typical for a pure vanilla extract of approximately two fold concentration. All of the substances indicative of vanilla are present and in relative concentrations typical of vanilla extract.

A sample was provided to me of a vanilla flavor ingredient that was represented to me as being one of the ingredients in the formulation of A&W Cream Soda. The ingredient was identified as 34102564 Lot 399519 Vanilla Flavor WONF. HPLC analysis of this sample yielded the results in Table 2. In my opinion, the results obtained for this ingredient are typical

for a vanilla/vanillin type formulated flavor. Based on the concentrations of the other substances indicative of vanilla, this ingredient appears to be formulated from a vanilla extract of approximately one fold concentration that has been fortified with added vanillin.

In conclusion, it is my opinion, to a reasonable degree of scientific certainty, that both A&W Root Beer and A&W Cream Soda contain natural vanilla as an ingredient. I base this opinion on my analyses of the vanilla flavor ingredients used in the preparation of these products. My analyses of the finished beverage products and my review of the analyses of these products performed by Dr. Hartman reveal no facts which would contradict this opinion.

Dana Krueger

Dated: 1 August 2019

APPENDIX A

MATERIALS CONSIDERED

Case Documents

Letter dated May 24, 2019 from Spencer Sheehan to District Judge Brian Cogan, with attached email chain to and from Daphna Havkin-Frenkel of Bakto Flavors, and attached report dated April 17, 2019 by Thomas Hartman of Rutgers University discussing the GC-MS analysis of certain beverage samples.

References

Official Methods of Analysis of the AOAC, 20th Ed. (2016), Method 990.25

Table 1 – HPLC analysis of A&W Root Beer Vanilla Ingredient

20032412 Lot 119212 Batch 389475 Vanilla Extract 2X

Hydroxybenzoic Acid	mg/L	111
Hydroxybenzaldehyde	mg/L	214
Vanillic Acid	mg/L	467
Vanillin	mg/L	2840

Table 2 – HPLC analysis of A&W Cream Soda Vanilla Ingredient

34102564 Lot 399519 Vanilla Flavor WONF

Hydroxybenzoic Acid	mg/L	40
Hydroxybenzaldehyde	mg/L	81
Vanillic Acid	mg/L	72
Vanillin	mg/L	15430

APPENDIX B

EXPERT QUALIFICATIONS OF DANA KRUEGER

1. My name is Dana Alan Krueger. I am the president of Krueger Food Laboratories, Inc., an independent food analysis laboratory. A copy of my current curriculum vitae is enclosed.

2. My business address is Krueger Food Laboratories, Inc., 21 Alpha Road, Suite D, Chelmsford MA 01824.

3. I hold a Bachelor of Science degree in Chemistry from the Massachusetts Institute of Technology. I spent a year in the graduate program in Organic Chemistry at the University of Pittsburgh. I have maintained the currency of my knowledge and skills through my normal professional work activity as a laboratory director, through study of the current scientific literature, through attendance at periodic short courses and seminars, through participation in scientific societies and expert committees and through ongoing research activities.

4. I am a member of, or participant in, numerous professional societies and industry associations, including:

   American Chemical Society

   American Oil Chemists Society

   American Society of Brewing Chemists

   AOAC International

   Association of the Industry of Juices and Nectars of Fruits and Vegetables

   Institute of Food Technologists

   International Federation of Fruit Juice Producers

   Technical Committee for Juice and Juice Products

   United States Pharmacopeial Convention

5. I am a Certified Food Scientist, as certified by the Institute of Food Technologists. I am a Fellow of AOAC International, and have participated on many of their expert committees. I am a member of the Code of Practice Expert Committee of the Association of the Industry of Juices and Nectars of Fruits and Vegetables (AIJN) and was involved in the drafting and approval of the AIJN Code of Practice Guide Values for Coconut Juice. I am a member of the Commission on Methods of Analysis of the International Federation of Fruit Juice Producers (IFU). I was a member of the Food Industry Analytical Chemists Committee of

the Grocery Manufacturers Association (GMA), until this committee was recently deactivated. I am the current Chairman and a previous past Chairman of the Technical Committee for Juice and Juice Products (TCJJP). I am a member of the Food Ingredients Expert Committee of the United States Pharmacopeial Convention (USP).

6. I have published numerous articles and abstracts of scientific presentations on subjects relating to food science and food analysis, including research on the authentication of coconut water. A list of my publications is included in the attached curriculum vitae.

7. I have served as an expert witness and provided testimony, at depositions and at trial, in several matters over my career. I have not provided testimony at trial in any matter in the last four years. I was deposed in 2018 in the matter of JACKIE FITZHENRY-RUSSELL AND GEGHAM MARGARYAN, individuals, on behalf of themselves, the general public and those similarly situated, Plaintiffs, v. DR PEPPER SNAPPLE GROUP, INC., DR PEPPER/SEVEN UP, INC., and DOES 1-50, Defendants, Case No. 5:17-cv-00564-NC, UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF CALIFORNIA

8. I am being compensated for my participation in this matter. My compensation is based upon time billing at a rate of $250.00 per hour, plus actual expenses.

DANA ALAN KRUEGER
President
Krueger Food Laboratories, Inc.
President
Krueger Enterprises, Inc. (dba Geochron Laboratories)
21 Alpha Road, Suite D
Chelmsford, MA 01824

Education:

1979-80	University of Pittsburgh Pittsburgh, PA Graduate program in Chemistry: organic synthesis
1975-9	Massachusetts Institute of Technology Cambridge, MA Bachelor of Science, Chemistry

Continuing Education:

Quality Assurance for Analytical Laboratories
AOAC Short Course, Washington, DC (1984)

Accreditation vs. Registration
AOAC Int./AALA Short Course, Washington, DC (1993)

Work Experience:

1984 to Present	Krueger Food Laboratories, Inc. Chelmsford, MA President and Founder: Direction of an analytical laboratory specializing in food analysis.
1982-4 and 1999 to Present	Krueger Enterprises, Inc. Chelmsford, MA President (1999 to Present): Direction of an analytical laboratory specializing in isotope analysis. Research Director (1982-4): Development of new analytical procedures and commercial services in the area of isotope analysis, particularly in the detection of adulterated foodstuffs.
1980-2	KOR Incorporated Cambridge, MA Chemist: Synthesis of isotopically labelled compounds and specialty chemicals

Memberships:

American Chemical Society
American Oil Chemists Society
American Society of Brewing Chemists
AOAC International
(Fellow 1997, Peer Verified Methods Advisory Committee 1994-2000, Horwitz Advisor, 2004-2006, Commodity Foods Committee 1997-2006, General Referee for Flavors 1988-2000, Associate Referee for Vinegar 1986-1992, Associate Referee for 14C in Flavors 1988-93, Associate Referee for 13C/12C in Fruit Juices 1995-2000, Northeast Regional Section Executive Committee 1996-8, Northeast Regional Section President 1998-99, Sam-E Expert Review Panel, Co-Study Director, Modification of AOAC Official Method 998.12 2011-13, Chairman, Stakeholder Panel on Dietary Supplements Anthocyanin Working Group, 2014-5, Folin-Ciocalteu Expert Review Panel 2015-2018, Chairman, Solids in Syrups Expert Review Panel 2017, Ginger Expert Review Panel 2017-2018)
Association of the Industry of Juices and Nectars of Fruits and Vegetables
(Code of Practice Expert Committee)
Institute of Food Technologists
(Professional Member, Certified Food Scientist)
International Federation of Fruit Juice Producers
(Commission on Methods of Analysis)
Technical Committee for Juice and Juice Products
(Executive Board, terms 1992-1995, 2014 -2016, ByLaws Committee Chairman, 1993-5, Executive Board Chairman, 2005-2007, 2018-2020, Executive Board Chair elect 2016-2018)
United States Pharmacopeial Convention
(Expert Committee on Food Ingredients, term 2015-2019)
(Food Adulteration Expert Panel, term 2015-2019)
(Heavy Metals Expert Panel, term 2015-2019)
(Joint-Standards Setting Subcommittee (JS3) FDSHM+EXC, term 2015-2019)
(Honey Expert Panel, term 2018-2019)

Publications:

Krueger, D. A., and Krueger, H. W., Carbon Isotopes in Vanillin and the Detection of Falsified "Natural" Vanillin, *J. Agr. Food Chem.*, **1983** *31,* 1265-1268

Krueger, D. A., and Krueger, H. W., Comparison of Two Methods for Determining Intramolecular 13C/12C Ratios of Acetic Acid, *Biomedical Mass Spectrometry*, **1984,** *11,* 472-474

Krueger, D. A., and Krueger, H. W., Detection of Fraudulent Vanillin Labelled with 13C in the Carbonyl Carbon, *J. Agr. Food Chem.*, **1985**, *33*, 323-325

Krueger, D. A., and Krueger, H. W., Isotopic Composition of Carbon in Vinegars, *J. Assoc. Off. Anal. Chem.*, **1985**, *68*, 449-452

Krueger, D. A., Krueger, R.-G., and Krueger, H. W., Carbon Isotope Ratios of Various Fruits, *J. Assoc. Off. Anal. Chem.*, **1986**, *69*, 1035-1036

Byrne, B., Wengenroth, K. J., and Krueger, D. A., Determination of Adulterated Natural Ethyl Butyrate by Carbon Isotopes, *J. Agr. Food Chem.*, **1986**, *34*, 736-738

Krueger, D. A., Determination of Adulterated Bitter Almond Oil by Carbon Isotopes, *J. Assoc. Off. Anal. Chem.*, **1987**, *70*, 175-176

Krueger, D. A., Improved Method for 14C Determination in Oils of Bitter Almond and Cassia, abstract 101st International Meeting of the Association of Official Analytical Chemists (1987)

Krueger, R.-G., and Krueger, D. A., Detection and Estimation of Corn Syrup in Barley Malt Syrup Using Carbon SIRA, abstract 101st International Meeting of the Association of Official Analytical Chemists (1987)

Krueger, D. A., Detection of Adulterated Orange Juice, in Ready to Serve Citrus Juices and Juice Added Beverages: 1988 Food Industry Short Course Procedings, R. F. Matthews, ed., (1988) IFAS and IFT Florida Section

Krueger, D. A., Applications of Stable Isotope Ratio Analysis to Problems of Fruit Juice Adulteration, in Adulteration of Fruit Juice Beverages, S. Nagy, J. Attaway and M. Rhodes, eds., (1988) Marcel Dekker

Krueger, D. A., Detection of Synthetic Flavoring Materials Using Hydrogen Stable Isotope Ratios, abstract 102nd International Meeting of the Association of Official Analytical Chemists (1988)

Morselli, M., Currier, W. S., Baggett, W. L., Whelan, M. L., and Krueger, D. A., HPLC Analysis of Phenolics in Maple Syrup Darkened in Bulk Containers, abstract 102nd International Meeting of the Association of Official Analytical Chemists (1988)

Soileau, S. D., Hunter, K. W., Brimfield, A. A., Krueger, D. A., and Maciel, J., Detection of Raffinose in Foodstuffs by Enzyme Immunoassay, abstract 102nd International Meeting of the Association of Official Analytical Chemists (1988)

Krueger, D. A., Detection of Added Sugar in Fruit Juice Using Stable Isotope Ratio Analysis, in 2nd Fruit Juice Authenticity Workshop, A. Brause, ed., (1989) General Physics Corp.

Krueger, D. A., General Referee Report: Flavors, *J. Assoc. Off. Anal. Chem.*, **1989**, *72*, 86

Krueger, D. A., General Referee Report: Flavors, *J. Assoc. Off. Anal. Chem.*, **1990**, *73*, 120-121

Krueger, D., Detection of Beet Sugar in Orange and Grapefruit Juices by Deuterium/Hydrogen Isotope Ratios, abstract 200th National Meeting of the American Chemical Society (1990)

Krueger, R.-G., and D. Krueger, Adulteration of Fruit Products with Sugars or Other Fruits, abstract 104th International Meeting of the Association of Official Analytical Chemists (1990)

Krueger, D., A Critique of AOAC Method 22.B06 for Detection of Orange Pulpwash Solids in Orange Juice, abstract 104th International Meeting of the Association of Official Analytical Chemists (1990)

Krueger, D., J. Maciel and R.-G. Krueger, Composition of Commercial Apple Juice, abstract 104th International Meeting of the Association of Official Analytical Chemists (1990)

Krueger, D., Detection of Beet Sugar in Orange Juice, abstract 104th International Meeting of the Association of Official Analytical Chemists (1990)

Krueger, D., Authentication of Natural Flavoring Materials, in Food Labs '91: The First Annual Conference on Equipping, Managing, and Working in the Food Laboratory of Tomorrow (1991) Packaging Strategies, Inc., West Chester, PA

Krueger, D. and R.-G. Krueger, Sample Preparation Bias in Carbon Stable Isotope Ratio Analysis of Fruit Juices and Sweeteners, abstract 105th International Meeting of the Association of Official Analytical Chemists (1991)

Maciel, J. and D. Krueger, A Simple Method for Determination of Procymidone Residues in Wine, abstract 105th International Meeting of the Association of Official Analytical Chemists (1991)

Krueger, R.-G. and D. Krueger, The Use of Carbon-14 Analysis for the Determination of Petrochemical Synthetic Flavoring Materials, abstract 202nd National Meeting of the American Chemical Society (1991)

Krueger, D., The Use of Computer Pattern Recognition Techniques for Authentication of Extracts and Essential Oils, abstract 202nd National Meeting of the American Chemical Society (1991)

Krueger, D. A., Detection of Corn-Derived Vinegar in Apple Cider Vinegar: Collaborative Study, *J. Assoc. Off. Anal. Chem.*, **1992**, *75*, 725-728

Krueger, D. A., Maciel, J., and Krueger, R.-G., Composition of Pineapple Juice, *J. Assoc. Off. Anal. Chem.*, **1992**, *75*, 280-282

Krueger, D. A., General Referee Report: Flavors, *J. Assoc. Off. Anal. Chem.*, **1992**, *75*, 91

Krueger, D. A., Krueger, R.-G., and Maciel, J., Reaction to Letter to Editor on Composition of Pineapple Juice, *J. Assoc. Off. Anal. Chem.*, **1992**, *75*, 133A-134A

Krueger, D. A., New Analytical Techniques for the Detection of Added Sugars in Citrus Juices, abstract 1992 IFT Annual Meeting (1992)

Krueger, D. A., Maciel, J., and Lin, S., Composition of Vanilla Extract, abstract 106th International Meeting of the Association of Official Analytical Chemists (1992)

Krueger, D. A., Maciel, J., Lin, S. and Shifrin, E., Composition of Strawberry Juice, abstract 106th International Meeting of the Association of Official Analytical Chemists (1992)

Krueger, D. A., General Referee Report: Flavors, *J. Assoc. Off. Anal. Chem.*, **1993**, *76*, 107-8

Krueger, D. A., Sample Preparation Bias in Carbon Stable Isotope Ratio Analysis of Fruit Juices and Sweeteners, *J. Assoc. Off. Anal. Chem.*, **1993**, *76*, 418-420

Krueger, D. A., Detection of Adulterated Fruit Flavors, abstract 206th National Meeting of the American Chemical Society (1993)

Wrolstad, R. E., Durst, R. W., and Krueger, D. A., Red Raspberry Juice Composition, abstract 107th International Meeting of the Association of Official Analytical Chemists (1993)

Krueger, D. A., Authentication of Commercial Apple Juice, in Juice Technology Workshop October 18-19, 1993, D. L. Downing, Ed., **1993**, Special Report number 67 of the New York Agricultural Experiment Station, Geneva, NY

Krueger, D. A., General Referee Report: Flavors, *J. Assoc. Off. Anal. Chem.*, **1994**, *77*, 130-1

Krueger, D. A., Eisele, T. and Iuliano, T., Determination of D-Malic Acid in Apple Juice by Enzyme Assay: an Interlaboratory Study, abstract 108th International Meeting of the Association of Official Analytical Chemists (1994)

Krueger, D. A., Stable Isotope Ratio Analysis in Fruit Juice Evaluation, in Workshop on Juice Analysis: Analytical Techniques for Determining Composition and Authenticity of Fruit Juices, (1994) AOAC International/Technical Committee for Juice and Juice Products

Krueger, D. A., Detection of Added Sugar to Fruit Juices Using Carbon and Hydrogen Stable Isotope Ratio Analysis, in Methods to Detect Adulteration of Fruit Juice Beverages, Volume 1, S. Nagy, R. Wade, eds., (1995) AgScience

Krueger, D. A., Detection of Adulterated Fruit Flavors, in Fruit Flavors: Biogenesis, Characterization, and Authentication, ACS Symposium Series 596, R. L. Rouseff and M. M. Leahy eds., (1995) American Chemical Society

Krueger, D. A.and Maciel, J., Authentication of Aloe Vera Products, abstract 109th International Meeting of the Association of Official Analytical Chemists (1995)

Krueger, D. A., Analysis of Calcium in Fruit Juices by Flame AAS: a Ruggedness Study, abstract 109th International Meeting of the Association of Official Analytical Chemists (1995)

Durst, R. W., Wrolstad, R. E., and Krueger, D. A., Sugar, Nonvolatile Acid, $^{13}C/^{12}C$ Ratio, and Mineral Analysis for Determination of the Authenticity and Quality of Red Raspberry Juice Composition, *J. Assoc. Off. Anal. Chem.*, **1995**, *78*, 1195-1204

Krueger, D. A., Fruit Juice Analysis: Detection of Fraudulent and Mislabeled Fruit Juices, in Juice Technology Workshop August 12-13, 1996, J. Anderson, Ed., **1996**, Special Report number 70 of the New York Agricultural Experiment Station, Geneva, NY

Krueger, D. A., and Maciel, J., Detection of Corn Syrup in Invert Sugar Syrups by Trace Oligosaccharide Analysis, abstract 110th International Meeting of the Association of Official Analytical Chemists (1996)

Krueger, D. A., and Maciel, J., Detection of Roselle Colorant in Strawberry and Red Raspberry Juices, abstract 110th International Meeting of the Association of Official Analytical Chemists (1996)

Krueger, D. A., General Referee Report: Flavors, *J. AOAC International*, **1997**, *80*, 115-6

Kahan, S. and Krueger, D. A., Liquid Chromatographic Method for Determination of Vanillin and Ethyl Vanillin in Imitation Vanilla Extract (Modification of AOAC Official Method 990.25): Collaborative Study, *J. AOAC International*, **1997**, *80*, 564-570

Krueger, D. A., Detection of Guaiacol, an Off-Odorant, in Apple Juice, abstract 111th International Meeting of the Association of Official Analytical Chemists (1997)

Krueger, D. A., Formation of Reversion Disaccharides in Fruit Juice Concentrates During Processing, abstract 111th International Meeting of the Association of Official Analytical Chemists (1997)

Krueger, D. A., Stable Isotope Analysis by Mass Spectrometry, in Analytical Methods of Food Authentication, P. Ashurst, Ed., Chapman and Hall (1998)

Krueger, D. A., Detection of Beet Sugar in Maple Syrup by Hydrogen Stable Isotope Ratio Mass Spectrometry, abstract 112th International Meeting of the Association of Official Analytical Chemists (1998)

Krueger, D. A., Identification of the Marker Disaccharides Indicating Hydrolyzed Inulin Syrup Addition to Fruit Juices, abstract 112th International Meeting of the Association of Official Analytical Chemists (1998)

Krueger, D. A., New Developments in Stable Isotope Ratio Analysis of Fruit Products and Syrups, in Food Authenticity Workshop, Nicolas Sennequier, Ed. (1998) ENI Laboratories, Montreal, September 13, 1998

Lynch, J. M., P. Kasturi, P. C. Ellis, D. A. Krueger, D. A. Bennett, D. M. Sullivan, B. Cottingham, M. E. Cole, J. Henderson, Methods Committee Reports - Methods Committee on Commodity Foods and Food Products, *J. AOAC International*, **2003**, 86(1) 174-177

Krueger, D. A., Composition of Commercial Pomegranate Juice, abstract 122nd International Meeting of the Association of Official Analytical Chemists (2008)

Zhang, Y., D. A. Krueger, R. Durst, R. Lee, D. Wang, N. Seeram and D. Heber, International Multidimensional Authenticity Specification (IMAS) Algorithm for Detection of Commercial Pomegranate Juice Adulteration, *J. Agric. Food Chem.* **2009** *57(9)* 3961

Krueger, D. A., Composition of Acai Juice, abstract 123rd International Meeting of the Association of Official Analytical Chemists (2009)

Krueger, D. A., Detection of Adulterated Pomegranate Juice, abstract 123rd International Meeting of the Association of Official Analytical Chemists (2009)

Durst, R., B. Frei, Y. Zhang, D. Heber and Krueger, D. A., Pomegranate: Composition of a Superfruit, abstract 123rd International Meeting of the Association of Official Analytical Chemists (2009)

Krueger, D. A., Detection of Added Citric Acid to Pomegranate Juice, abstract 124th International Meeting of the Association of Official Analytical Chemists (2010)

Krueger, D. A., Detection of Adulterated Agave Syrup, abstract 124th International Meeting of the Association of Official Analytical Chemists (2010)

Twohig, M., Burgess, J., Gledhill, A., Rosnack, K., Young, P. B. and Krueger, D. A., Pomegranate sample profiling using multivariate data analysis, high resolution chromatography, UV and Time of Flight MS detection, abstract American Society of Mass Spectrometry (2011)

Burgess, J., M. Twohig, D. A. Krueger, A. Gledhill, J. Yang, Super Fruit Juice Authenticity Using Multivariate Data Analysis, High Resolution Chromatography, UV and Time of Flight Mass Detection, *Agro Food Industry Hi Tech - Food Analysis*, **2011**, 22(5) 23-26

Hobbs, L. J., and Krueger, D. A., Response to "Response to the Letter Regarding 'Sugar Content of Popular Sweetened Beverages'", *Obesity*, **2011** 19(4) 688

Gledhill, A., Krueger, D. A., Twohig, M., Burgess, J., "Super fruit juice authenticity using multivariate data analysis high resolution chromatography UV and Time of Flight MS detection", *AgroFOOD Industry High-tech, Supplement "Focus on Food Analysis"*, **2011**, 22(5) 23-26, Poster Abstract: PittConn (2011)

Krueger, D. A., Composition of Pomegranate Juice, *J. AOAC International*, **2012**, 95(1) 163-168

Rogers, K.M., Cook, J.-M., Krueger, D. A., Beckmann, K., AOAC Method 998.12, C-4 Plant Sugars in Honey: A Collaborative Study of Two Modifications of the Protein Preparation Procedure, abstract 126th International Meeting of the Association of Official Analytical Chemists (2012)

Rogers, K.M., Cook, J.-M., Krueger, D. A., Beckmann, K., Modification of AOAC Official Method SM 998.12 to Add Filtration and/or Centrifugation: Interlaboratory Comparison Exercise, *J. AOAC International*, **2013**, 96(3) 607-614

Krueger, D. A., Composition of Mango Juice, abstract 127th International Meeting of the Association of Official Analytical Chemists (2013)

Krueger, D. A., Composition of Sweet Cherry Juice, abstract 128th International Meeting of the Association of Official Analytical Chemists (2014)

Krueger, D. A., Authentication of Pure Coconut Water, abstract 2015 Pittsburgh Conference (2015)

Krueger, D. A., Recent Problems of Economic Adulteration of Fruit Juices in the American Market, abstract 129th International Meeting of the Association of Official Analytical Chemists (2015)

Dana Krueger, D., S. Arora, A. Bzhelyansky, P. Chen, A. Chlenov, M. Collison, R. Durst, N. Eddine Es-Sa, G. Giancaspro, G. Hall, J. Hammerstone, P Ingle, M. Jennens-Clough, D. Ji, J. Ji, D. Kennedy, T Lawson, J. Lee, S Lock, E. Mudge, J. Neal-Kababick, M. Phillips, T. Phillips, A. Rejaei, M Rettinger, C. Rimmer, A. Rodriguez-Haralambides, S. Royce, B. Schaneberg, A. Solyom, N. Stern, D. Sullivan, J Szpylka, M. Wise, X. Yan, S.-J. Yoo, K. Yu, Y. Zhang, S. Coates, AOAC SMPR 2014.007, Authentication of Selected Vaccinium species (Anthocyanins) in Dietary Ingredients and Dietary Supplements, *J. AOAC International*, **2015**, 98(4) 1052-4

Krueger, D. A., Composition of Commercial Goji Berry Juice, abstract 130th International Meeting of the Association of Official Analytical Chemists (2016)

Krueger, D. A., Standard Methods for Sugar Analysis of Fruit Juices, abstract 130th International Meeting of the Association of Official Analytical Chemists (2016)

Rosnack, K., Mullin, L., Romano, J., Dowd, S., Phillips, M., Krueger, D. A., Structural Elucidation of an Unknown Compound in Avocado Fatty Acid Methyl Esters (FAMEs) Extract Using APGC-HRMS, abstract American Society for Mass Spectrometry, 2017 Annual Conference, (2017)

Ara, V., Krueger, D., Hammond, D. A., Jamin, E., M. Hofsommer, M., Compositional Data for the Control of the Quality and Authenticity of Coconut Water, abstract 131st International Meeting of the Association of Official Analytical Chemists (2017)

Krueger, D. A., Detection of Added Water and Citric Acid to Pomegranate Juice Using Stable Isotope Ratio Analysis, abstract 132nd International Meeting of the Association of Official Analytical Chemists (2018)

Exhibit 3

Givaudan

Product Information
Material Disclosure

May 20, 2019

Nat Vanilla Flavor WONF #KM-668-925-6 (34102564)

In response to your inquiry regarding the above-referenced flavor we have determined the following:

The flavor contains added vanilla extract.

This is a standard document and consequently not signed.
The information provided in this document is valid for the period of time in which the customer is purchasing commercial quantities of this product, unless superseded by subsequent disclosures made by Givaudan.

Product Safety & Regulatory Assurance
Givaudan Flavors Corp.
1199 Edison Drive,
Cincinnati, OH 45216-2265 USA

T +15139483587 F +15139485435
na.document_service@givaudan.com

Exhibit 4

FIRMENICH FLAVOURS
flavours@firmenich.com
www.firmenich

Firmenich

PRODUCT DESCRIPTION PD PD C28104-1.1EN
2-Fold Vanilla Extract

Description

Product form:	Liquid
Profile:	Vanilla Flavor/Aroma

Application areas

- Beverages
- Dairy products
- Confectionery

Composition

(According to Title 21, Code of Federal Regulations (CFR))

Flavouring part:

Vanilla Bean Extractives

Non-flavor ingredients:

- Water
- Ethyl Alcohol
- Invert Sugar

Properties

Colour * :	Brown
Alcohol content :	38.5 ± 1.5%v/v
Weight/gallon :	8.84±0.2 pounds
Solubility:	Water soluble
Flash Point (Closed cup) :	>61°C
Flash Point (Closed cup) :	>141°F

(The values are considered to be typical data)
*) Minor color variations may occur from one batch to another. Furthermore, the color may change during storage

Physical/chemical specifications

(methods of analysis available on request)

Specific gravity (25°/25°C)	1.061 ± 0.024
Refractive index (25°C)	1.394 ±0.004

Nutritional data

Approximate values for nutrition labelling per 100 g.

Energy value	1429.06 Kj
Enery value	342.08 Kcal
Protein	0 g
Carbohydrate	29.25 g
- of which sugars	29.25 g
Fat	0 g
- of which transfatty acids	0 g
Sodium	0.36 mg

Storage

Recommended storage temperature:	60-90°F/16-32°C
Shelf life from date of production in unopened packaging:	12 Months

Keep away from sunlight.

Packaging

Polyethylene containers.

FIRMENICH FLAVOURS
flavours@firmenich.com
www.firmenich

Firmenich

Purity and legal status

All flavor ingredients contained in this product are approved for use in a regulation of the FDA, or are listed as being generally recognized as safe on the FEMA list.

Local food regulations should always be consulted concerning the use of this product.

Safety and handling

A Material Safety Data Sheet (MSDS) is available.

Country of origin

United States of America.

Kosher status

Kosher Certified

Halal status

Halal Suitable: no

GMO status

According to regulations (EC) Nos 1829/2003 and 1830/2003: The ingredients used in this product do not contain or consist of GMO's, and are not produced from GMO's. The documentation used has been provided by our suppliers.

Additional information

During storage, natural vanilla extract may precipitate some of the less soluble vanilla extractives. This occurs in many natural extracts and has no effect on the flavor quality of the vanilla.

Allergens

Below table indicates the presence (as added component) of the following allergens and products thereof:

Yes	No	Allergens	Description of the components
	X	Cereals containing gluten	
	X	Crustaceans	
	X	Egg	
	X	Fish	
	X	Peanuts	
	X	Soybeans	
	X	Milk (including lactose)	
	X	Nuts	
	X	Celery	
	X	Mustard	
	X	Sesame seeds	
	X	Sulphur dioxide and sulphites (>10mg/kg)	
	X	Lupin	
	X	Molluscs	

Disclaimer

Transferred to Firmenich on 1 July 2007

The information and recommendations contained herein are to the best of our knowledge reliable. However nothing herein is to be construed as a warranty. Users should make their own tests to determine the applicability of such information and its suitability for their own particular purpose. For the commercial use of this product including the labelling and description of any food into which it is incorporated, it shall remain the responsibility of the manufacturer of the food to identify and comply with all relevant legal requirements (including generally accepted practices, guidelines and standards) as based on the data supplied herein or any supplementary information provided on request.

Firmenich

INGREDIENT BREAKDOWN

PRODUCT: C28104 2-FOLD VANILLA EXTRACT

COMPONENT	AMOUNT RANGE IN PERCENT
Water	25-50%
Ethyl Alcohol	25-50%
Invert Sugar	25-50%
Vanilla Bean Extractives	1-10%

INGREDIENT STATEMENT: Water, Ethyl Alcohol, Invert Sugar and Vanilla Bean Extractives.
Firmenich, Inc.

Kathy Smith

Kathy Smith
Product Safety & Regulatory Affairs
Phone: 314-436-3133 x2161
Email: kathy.smith@firmenich.com

DATE: 4/30/2009

Exhibit 5

REPORT OF STEVEN KRAMER

I am Senior Technical Director, Flavor Technology, at Keurig Dr Pepper Inc. (KDP), the parent company of A&W Concentrate Company. I have been employed by KDP and its predecessor companies for 25 years. I am responsible for the Flavor Technology team, which includes two certified flavor chemists and one certified junior flavorist. I am responsible for the creation of new flavors system for new products, and as a technical expert supporting the Concentrate Commercialization team and Ingredient team in anything pertaining to flavors, flavor ingredients, and flavor concentrates. In addition, I work closely with these departments in R&D: Product Development, Regulatory, and Analytical. I also work with KDP's Procurement Department and KDP's manufacturing plant in St. Louis. The St. Louis plant is responsible for making the flavors and beverage concentrates for A&W Concentrate Company. During my 25 years at KDP and its predecessors, I've always been connected to the flavor, flavor ingredients, and concentrates of the companies, and with the St. Louis concentrate plant.

I have 45 years of experience with flavors and/or fragrances. I've been formulating flavors for 32 years and beverage concentrates for 25 years. My two previous jobs were also with beverage companies and I spent 11 years between them. I got my start in this field as an analytical chemist for fragrances and fragrance materials. Next, I spent four years at a major soft drink company analyzing flavor ingredients and developing new methods of analysis to detect "extensions" or "adulterations" of these materials. The next seven years were spent at an alcoholic beverage company, where I performed more analysis and also underwent training to be a certified flavorist. I created new flavor and in-house versions of existing flavors and studied how flavorings interacted with one another over those 7 years.

I have been involved with A&W concentrates over my 25 years at KDP and its predecessors. This work involved not only concentrates, but also the finished beverages.

Vanilla extract was very important to one of my former employers. While there, I obtained a deeper understanding of vanilla extract. In fact, my first tour of a vanilla extract production plant took place during my tenure there. I've been through two other such tours since then.

A&W Concentrate Co. uses Firmenich 2-fold vanilla extract C28104 in every batch of A&W Root Beer Concentrate. The formula for the concentrate is issued by the R&D team. This formula includes the recipe, the compounding instructions, and the Quality Control (QC) characteristics and test methods that must be done for every batch manufactured by the St. Louis concentrate team. There are no alternate materials or vendors for this material. A&W Concentrate Co. received from Firmenich the attached (Exhibit A)Ingredient Breakdown for their material #C28104 which states that the extract is composed of four ingredients: water, ethyl alcohol, invert sugar and vanilla bean extractives.

Givaudan Natural Vanilla Flavor WONF #KM-668-925-6 is added to every batch of A&W cream soda concentrate. There are no alternate materials or vendors for this material. A&W Concentrate Co. received from Givaudan the attached (Exhibit B) Ingredient Breakdown for their material #KM-668-925-6, which confirms that the flavor contains vanilla extract.

At the St. Louis Concentrate plant, every completed batch of concentrate is checked by the Quality Control Lab before it is packed off and sent to the customers (bottling plants). In fact, many of the completed concentrates, especially those produced in large volumes, e.g. A&W Root Beer (AWRB) and A&W Cream Soda (AWCS), are checked by this lab four times: once before pack-off, and three times during pack-off, at the beginning, middle, and end of the process. Every concentrate has a set of controlling standards set by R&D. Besides any physical tests which may be specific to each concentrate, there are three sensorial tests that must be performed for every concentrate: appearance, aroma, and taste. The set of controlling standards is designed to catch any deviation from the expected formula.

Similarly, the R&D team issues formulas to the bottling plants. Again, the formula contains a recipe, controlling standards, and batching instructions. Every plant has its own QC lab. The bottling plants run QC testing as instructed. Again, the tests include physical and sensorial testing (appearance, aroma, and taste). They cannot deviate from the given ranges. Throughout the run, as the product is being carbonated, samples are taken to the QC lab to check carbonation level and the other controlling standards. A deviation, e.g. too much HFCS42, would show up as out-of-spec at the high end of the apparent density and the brix value.

During my 36 years of experience with beverage flavoring systems, I have learned that small amounts of materials can have great synergistic effects, whether they are welcome or unwelcome. Small amounts of vanilla extract or vanilla extracts WONF can enhance the taste of beverages like colas, root beers, and cream sodas, and can also impact the mouth feel of the product or mitigate the unwanted linger of high intensity sweeteners in low/no-calorie beverages.

A&W Root Beer and A&W Cream Soda contain aged vanilla, which is another way of saying natural vanilla, which is used as a flavoring in the form of vanilla extract. The vanilla flavor of vanilla beans is optimized by aging the green beans directly after they are picked. By the documents referenced above, the Regulatory Departments of both Givaudan and Firmenich have confirmed that there is vanilla extract in their materials C28104 and KM-668-925-6, respectively. Both of their Regulatory Departments have industry-wide reputations of erring on the conservative side when providing any information to customers. The FDA sets a clear standard of identity for vanilla extract; therefore, I am confident in both companies' declarations.

Further, I had samples of Firmenich Vanilla Extract 2x #050001 C28104 and Givaudan Nat Vanilla Flavor WONF #KM-668-925-6 sent to Dana Krueger of Krueger Food Laboratories for analysis. These samples were aliquots pulled from inventory for production at KDP's St. Louis Concentrate plant. The flavorings were sent to him using KDP's item numbers, 20032412 for the Firmenich flavoring and 34102564 for the Givaudan flavoring.

My qualifications are in my attached resume.

I have not published any books or articles in the past 10 years.

During the past four years, I have been deposed in two cases: Jackie Fitzhenry-Russell vs. Dr Pepper Snapple Group, Inc. (California) and Webb vs. Dr Pepper Snapple Group, Inc. (Missouri). I have not testified at trial during the past four years.

I am an employee of KDP. My compensation is not affected in any way by my work on this matter.

Steven Kramer

2 August 2019

STEVEN KRAMER
1183 Plum Valley Drive
Frisco, TX 75033
Phone: 469 579 5273 Cell Phone: 314 761 4875 Email: SKramer240@gmail.com

I uniquely describe myself as a "commercial" flavorist. It starts with more than enough experience to be a Certified Flavorist; and a strong background as Instrumental Flavor Scientist. My success starts there, but it is my ability to deliver satisfaction not only to Consumers and Customers (e.g. Manufacturing), but also to Procurement, Operations, Quality, Marketing, and Sales. My "street cred" gives me a wide leeway to explore work on a company's most iconic brands, with support from all of these teams.

EXPERIENCE

2015-Present SENIOR TECHNICAL DIRECTOR, FLAVOR TECHOLOGY
2008-2011, 2015 DIRECTOR, FLAVOR TECHNOLOGY
2011-2014 DIRECTOR, FLAVOR AND CONCENTRATE TECHNOLOGIES
Keurig Dr Pepper (2018-19) / Dr Pepper Snapple Group, R&D, Plano, TX

- 2015: Focus on Flavor Creation and Technology. Consult as Subject Matter Expert for: Concentrate Development and Technology, Ingredient Technology, Emulsion Technology, and Ingredient Documentation.
- Build and lead a Flavor Technology team including three SFC-certified flavorists, two senior flavor applications scientists, and a flavor process engineer. In 2011, took lead of the Concentrate Tech Support team to deliver flavors from creation to commercialization.
- Deliver $2-$9 MM cost savings annually ('06-'14) via targeted value optimization projects.
- Deliver in-house and external flavors, emulsions, and concentrates to New Product Development to meet Marketing and Sales goals. Especial attention in the last five years given to low- and mid-calorie CSD's.
- Oversee Technical Platforms, aka Applied Research, in flavor and emulsion technology focusing on citrus materials, emulsion innovations, sweetener/flavor interactions, and process innovations.
- Successfully coach technical development and "soft-skills" of my team, exemplified by 8 promotions in the past 5 years.
- Responsible for the guardianship, application, and maintenance of DPSG's "unique know-how" flavor IP.
- Provide applications for Industry Defense Initiatives including low 4-MEI caramel formulas and work removing other ingredients with a negative public image, e.g. BVO. Recent focus on building clean-label capabilities.
- Deliver other business critical needs, e.g. Business Continuity Planning for flavors and concentrates.

2004-2007 FLAVOR TECHNOLOGY, DIRECTOR
Cadbury Schweppes Americas Beverages, Science and Technology Center, Trumbull, CT

- Continued technical duties from previous position and coached two food scientists to develop a flavor and emulsion core competency.
- Worked in-house or with preferred flavor vendors to provide Product Application and New Product Forms with the Innovation teams to meet Marketing's requirements.
- Developed a flavor strategy and flavor platform for CSAB to meet a 4-year Growth Plan. This included developing citrus, off-note masking, and fruit flavor platforms, identifying flavor trends, and finding innovative flavor delivery systems.
- Technical service duties included the maintenance of the Flavor Raw Material and Concentrate Formula information in CSAB's formula database, about 75% of all materials.

1995-2004 PROCESS LEADER, COST SAVINGS, CONCENTRATE MANUFACTURING SUPPORT
Cadbury Schweppes Americas Beverages Science and Technology Center, Trumbull, CT

- Managed a group of 1-3 scientists responsible for flavor and emulsion core competencies supporting Global Business Units and Global Concentrate Manufacturing.
- Increased concentrate manufacturing efficiencies and reduced costs by identifying new flavor and manufacturing technologies, rationalizing raw materials, and reducing complexity of processes.
- Lead technical support for Global Procurement flavor strategy. Reduced implementation times from years to months.
- Support the analytical group providing expert flavor interpretation of GC/MS results for troubleshooting and competitive product analysis.

1988-1995 **SENIOR FLAVOR SCIENTIST, FLAVOR TECHNOLOGY GROUP**
Joseph E. Seagram & Sons, Inc., Research and Development Center, White Plains, New York

- Received Flavorist Training with three external consultants: J. DiGenoa, W. May, and F. Frischetti.
- Developed new, value-optimized flavor systems for Marketing working with P.D., Engineering, Manufacturing, QC/QA, and Biotechnology.
- Improved margins a minimum of $750k annually for existing products by developing value-optimized flavor systems.
- Reduced NPD cycle times and flavor costs by establishing and maintaining a Flavor Library from vendors, utilizing innovative database, sampling, and fax request systems.
- Maintained flavor raw material libraries using computer database programs, allowing Flavor Technology to efficiently develop new flavors or augment existing flavors.
- Analyzed competitive products by GC, GC/MS, and HPLC to achieve marketing goals. Trained Chemists from Flavor Technology and Analytical Services to use GC/MS and interpret results.
- Prepared an annual review of new analytical & flavor material technologies, assessed impact to the business, and recommended purchases.

1986-1988 **SENIOR INSTRUMENTAL FLAVOR CHEMIST, FLAVOR MATERIALS QA LAB**
1984-1986 **INSTRUMENTAL FLAVOR CHEMIST, FLAVOR MATERIALS QA LAB**
PepsiCo Research and Technical Services Center, Valhalla, New York

- Provided brand protection by developing sophisticated analytical procedures to detect adulteration and poor quality of flavor materials
- Operate, maintain, and train other chemists to use analytical instrumentation including GC and GC/MS; trained chemists to interpret the data obtained from these analyses.

1979-1984 **ANALYTICAL CHEMIST, CORPORATE TECHNICAL SERVICES**
1978-1979 **SUPERVISOR CORP QC and ON-SITE QC LABS**
1975-1978 **CORPORATE QC LAB TECHNICIAN (analyzed raw materials and finished products)**
Faberge, Inc., Research and Development Center, Ridgefield/Mahwah, N.J.

- Operated and maintained Finnigan 4000 GC/MS; established in-house fragrance mass spectrum library with ethyl ester retention indices.
- Performed essential oil and fragrance analysis by preliminary classical column separation and subsequent GC/MS and GC-IR investigation.
- Analyzed a wide variety of cosmetic products.

AWARDS

May 2011: CEO Action Champion award for sustained value-optimization efforts year over year.
July 2005: President's Vision Award for developing the flavor and beverage base for Cherry Vanilla DP, the brand's first successful line extension

EDUCATION

Fairleigh Dickinson University, B.S. Chemistry, Magna cum Laude, 1980
Fairleigh Dickinson University, 36 of 48 credits completed towards M.S. Computer Science

PUBLICATIONS

Co-authored two published papers on GC/MS analysis of essential oils with leading industry experts, including B.M. Lawrence and Chi-Tang Ho

ORGANIZATIONS/ COMMITTEES

Ohio State University FREC representative (Flavor Research and Education Center)

University of Massachusetts SRA representative
Consultant / Guest Lecturer for Texas Women's University (Denton TX) Flavor Science Graduate Degree Program

Exhibit 6

Sheehan & Associates, P.C.
Spencer Sheehan
spencer@spencersheehan.com
(516) 303-0552

United States District Court
Eastern District of New York

1:19-cv-00768

Lashawn Sharpe and individually and on behalf of all others similarly situated

Plaintiff

- against -

A & W Concentrate Company and Keurig Dr Pepper Inc.

Defendant

Complaint

Plaintiff by attorneys alleges upon information and belief, except for allegations pertaining to plaintiff, which are based on personal knowledge:

1. A & W Concentrate Company and Keurig Dr Pepper Inc. ("defendants") manufacture, market, distribute, bottle and sell "root beer" and "cream soda" carbonated soft drinks ("CSD" or "soda") under the A & W brand.

2. The Products are sold in plastic and glass bottles and aluminum cans, in sizes such as 12 oz, 20 oz and 2 liters (67.6 oz), sold to consumers individually or in cases, from brick-and-mortar stores and online, by third-parties.

3. Root beer and cream soda are inextricably linked through their association with the coffee shops of their era – the luncheonette – and their principal flavoring component – vanilla.

4. Until the bottling industry matured to enable mass production, sodas were commonly handmade and dispensed at the soda fountain, a staple of every lunch counter, whether in a pharmacy, five-and-dime store or department store.

5. Though it is unknown who pioneered the idea of adding ice cream to carbonated water, this confection was an original "loss leader," due to the labor-intensive process of preparing and cleaning the porcelain or glass serving cup.

6. The delicacies were served up by the baristas of their day – "soda jerks" – who took pride in their craft which was surprisingly detailed.[1]

7. Ice cream floats were a popular invention around the very end of the 1800's - they were sold in pharmacies which kept carbonated water and flavored syrups on hand to serve to customers.

8. Root beer was also a soda which saw great success when mixed with vanilla ice cream, and to this day it is called a "root beer float."

9. The "original" ice cream soda may have relied on the most popular flavor of ice cream – vanilla – as the "cream" in the "cream soda" name.

10. However, it has been argued that the "cream" flavor provided by cream soda actually derived from vanilla.

11. This hypothesis draws support from scientific studies showing that vanilla can trigger identify a flavor as creamy without any textural changes.[2]

12. The representations lead consumers to reasonably believe that Defendants' soft drink is made from, and contains, real vanilla extract, and that consumers who drink the soft drink will be engaging in a "healthy indulgence" if they had consumed Products made with real vanilla and will be receiving value for their dollar.

13. In truth, Defendants' soft drink is not made from real vanilla but from carbonated

[1] *Standard Manual of Soda and Other Beverages*, 1897.
[2] Sarah V. Kirkmeyer et al., "Understanding creaminess perception of dairy products using free-choice profiling and genetic responsivity to 6-n-propylthiouracil," *Chemical Senses* 28.6 (2003): 527-536.

water, high fructose com syrup, preservatives, and a chemical flavor compound manufactured to mimic the taste of vanilla but with none of the actual flavorings, benefits or value of real vanilla.

14. Defendants prominently made the claim "MADE FROM AGED VANILLA" on the front label panel of its Products cultivating a wholesome and natural image in an effort to promote the sale of its soft drink and to compete with small batch vanilla beverages that do use real vanilla.

15. the barrel imagery fosters the impression that even though the products are obviously not made in a barrel anymore, the products contain *ingredients* which could be used in the era where soda in a barrel was commonplace.

16. The extra-label representations – on the defendants' website www.rootbeer.com and in images provided to third-parties– promote the connection of vanilla to the Products – through the connection to vanilla ice cream.

17. Consumers value the representation "MADE FROM AGED VANILLA" because studies have found that real vanilla simulates a creamy texture, satisfying consumers' needs for consumption of fat-rich foods, without the actual fat and calories.

18. Consumers also value it because it is the ideal combination of spice and sweet – contrary to its dictionary definition of "plain."

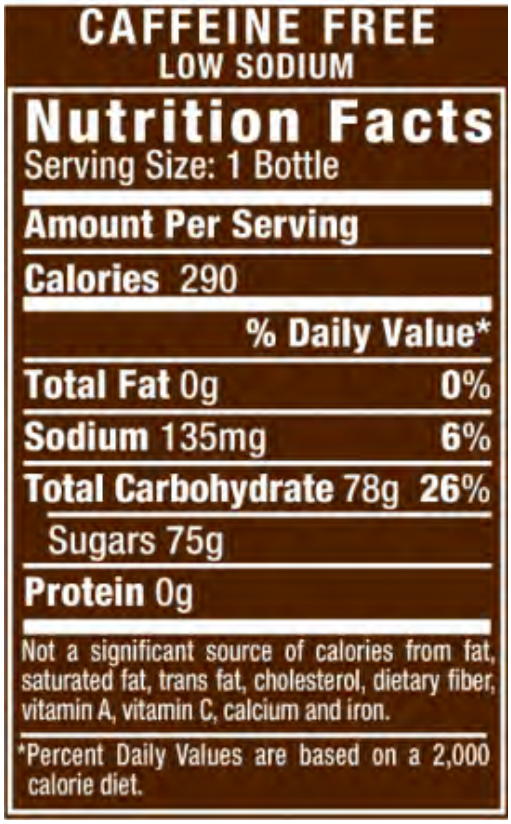
19. Defendants' product labels did not disclose that the soft drink contains no real vanilla and that the products' vanilla content is non-existent or minimal, because if there were real vanilla, the ingredient list would indicate this as required and permitted by law.

20. The Products' contain direct and/or indirect representations with respect to the primary recognizable flavors of the foods – vanilla.

21. The result is a labeling scheme that is designed to mislead consumers, and which does so effectively.

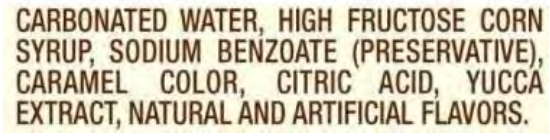
22. This is because the ingredient lists on the Products indicate they do not contain "aged vanilla," "vanilla" or any other kind of vanilla.

Root Beer[3]



CARBONATED WATER, HIGH FRUCTOSE CORN SYRUP, CARAMEL COLOR, SODIUM BENZOATE (PRESERVATIVE), NATURAL AND ARTIFICIAL FLAVORS, QUILLAIA EXTRACT.

Cream Soda



CARBONATED WATER, HIGH FRUCTOSE CORN SYRUP, SODIUM BENZOATE (PRESERVATIVE), CARAMEL COLOR, CITRIC ACID, YUCCA EXTRACT, NATURAL AND ARTIFICIAL FLAVORS.

[3] The non-diet root beer and cream sodas contain high fructose corn syrup while the diet versions contain aspartame.

23. Each Product's ingredient list discloses that it is instead flavored with compounds identified as "natural and/or artificial flavor."

24. These Products in fact owe their characterizing flavors to Defendant's use of artificial and natural flavors, which are not derived from real vanilla.

25. The relevant differences are quillaia extract in the root beer and yucca extract in the cream soda.

26. It is misleading to claim the Products are “Made With Aged Vanilla” because the vanilla bean is the fruit of the vanilla plants.

27. The vanilla bean is not consumed by itself – it is necessary to scrape the seed from the pod, infuse it or extract it.

28. Various commercial products are derived from the vanilla plant including extracts, flavor, powder and vanillin.

29. Vanilla extracts are considered the product type most equivalent to “vanilla” and are defined by regulations as solution in aqueous ethyl alcohol of the sapid and odorous principles extractible from vanilla beans.[4]

30. Ethyl alcohol content of such an extract is not less than 35% by volume, and the extractible matter of one or more units of vanilla constituent.

31. A unit of vanilla constituent is 13.35 oz of beans containing not more than 25% moisture per gallon of finished extract.

32. This amounts to the extractible matter of not less than 10.0125 oz of beans on the moisture-free basis.

33. This means that the weight of beans to manufacture each gallon of vanilla extract can

[4] 21 C.F.R. § 169.175 (“Vanilla extract.”) 21 CFR 169.175–169.182,

vary, depending on the moisture content of the beans.

34. Vanilla flavoring is similar to vanilla extract but contains less than 35% ethyl alcohol by volume.

35. Where a product claims to be made with actual vanilla but is made with flavors that simulate vanilla – derived from non-vanilla plants – it is misleading to consumers.

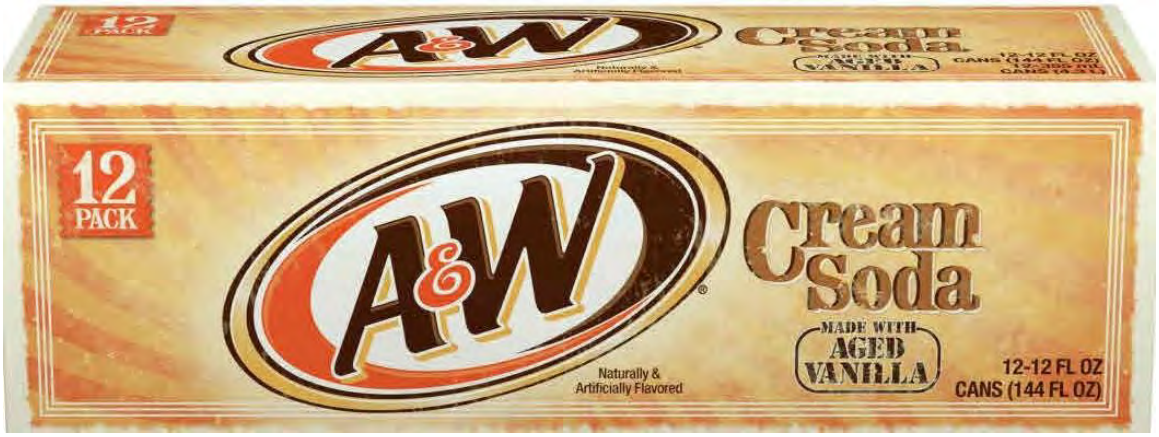
36. The Products contain derivatives chemically related to the vanilla bean but not from the vanilla bean.

37. Consumers are led to believe that they would obtain the real vanilla extract or flavor when, as a matter of fact, the product was not vanilla extract, but was a compound and imitation substituted in its place.

38. Defendants actions were undertaken to compete with the rise of artisanal beverage producers who include actual vanilla, derived from the vanilla plant, in their products.

39. The fluctuations in vanilla supply has caused companies like defendant to rely on flavoring which purports to simulate vanilla extract, which is not feasible given the number of unique compounds contained in the vanilla bean.

40. To the extent the Products disclose the presence of natural and artificial flavors, this is in addition to the claims that the Products are "Made with Aged Vanilla."



41. The result is the consumer has no way to tell if real vanilla is a part of the natural and artificial flavors.

42. Moreover, if the consumer would look at the ingredient list, they would see ingredients like "quillaia extract" and "yucca extract," exotic sounding names, giving them confidence that "real vanilla must be in there somewhere because it's got these other natural, plant sounding ingredients."

43. The Products contain other representations which are misleading and deceptive.

44. Excluding tax, the Products cost no less than $1.99 per 12 oz, a premium price compared to other similar products.

Jurisdiction and Venue

45. Jurisdiction is proper pursuant to 28 U.S.C. § 1332(d)(2).

46. Upon information and belief, the aggregate amount in controversy is more than $5,000,000.00, exclusive of interests and costs.

47. This court has personal jurisdiction over defendant because it conducts and transacts business, contracts to supply and supplies goods within New York.

48. Venue is proper because plaintiff and many class members reside in this District and defendant does business in this District and in New York.

49. A substantial part of events and omissions giving rise to the claims occurred in this District.

Parties

50. Plaintiffs are citizens of Kings County, New York (1) and Cook County, Illinois (2).

51. Defendant A & W Concentrate Company is a Delaware corporation with a principal place of business in Plano, Texas.

52. Defendant Keurig Dr Pepper Inc. is a Delaware corporation with a principal place of business in Burlington, Massachusetts.

53. In 2016, 2017 and/or 2018, plaintiff 1 purchased one or more Products for personal consumption as represented herein, for no less than $1.99 per (12 oz) product, excluding tax, within this district and/or State and plaintiff 2 purchased in the corresponding district to residence.

54. Plaintiffs paid this premium because prior to purchase, plaintiffs saw and relied on the misleading representations.

55. Plaintiffs would purchase the Products again if there were assurances that the Products' representations were no longer misleading.

Class Allegations

56. The classes consist of all consumers in the following states: all, New York who purchased any Products with actionable representations during the statutes of limitation.

57. A class action is superior to other methods for fair and efficient adjudication.

58. The class is so numerous that joinder of all members, even if permitted, is impracticable, as there are likely hundreds of thousands of members.

59. Common questions of law or fact predominate and include whether the representations were likely to deceive reasonable consumers and if plaintiff(s) and class members are entitled to damages.

60. Plaintiff(s) claims and the basis for relief are typical to other members because all were subjected to the same representations.

61. Plaintiff(s) is/are an adequate representative because his/her/their interests do not conflict with other members.

62. No individual inquiry is necessary since the focus is only on defendant's practices and the class is definable and ascertainable.

63. Individual actions would risk inconsistent results, be repetitive and are impractical to justify, as the claims are modest.

64. Plaintiff(s) counsel is competent and experienced in complex class action litigation and intends to adequately and fairly protect class members' interests.

65. Plaintiff(s) seeks class-wide injunctive relief because the practices continue.

New York General Business Law ("GBL") §§ 349 & 350 and Illinois Consumer Fraud and Deceptive Business Practices Act

66. Plaintiffs incorporates by references all preceding paragraphs.

67. Defendants' representations are false, unfair, deceptive and misleading

68. Defendants' acts, practices, advertising, labeling, packaging, representations and

omissions are not unique to the parties and have a broader impact on the public.

69. Plaintiff desired to purchase products which were as described by defendant and expected by reasonable consumers, given the product type.

70. The representations and omissions were relied on by plaintiff and class members, who paid more than they would have, causing damages.

Negligent Misrepresentation

71. Plaintiffs incorporates by references all preceding paragraphs.

72. Defendant misrepresented the composition of the Products.

73. Defendants had a duty to disclose and/or provide non-deceptive labeling of the Products and knew or should have known same were false or misleading.

74. This duty is based, in part, on the representations that the Products were "Made With Aged Vanilla" because vanilla is the singularly most favorable spice used in everyday consumer products.

75. Defendant negligently misrepresented and/or negligently omitted material facts.

76. Plaintiffs reasonably and justifiably relied on these negligent misrepresentations and omissions, which served to induce and did induce, the purchase of the Products.

77. Plaintiff and class members would not have purchased the Products or paid as much if the true facts had been known, thereby suffering damages.

Breach of Express Warranty and Implied Warranty of Merchantability

78. Plaintiff incorporates by references all preceding paragraphs.

79. Defendants manufactures, labels and sells Products purporting to be derived from aged vanilla which is deceptive because all vanilla is "aged" in that the extractives need time to release the odorous substances contained therein and the Products do not contain any actual vanilla.

80. The representations warranted to plaintiff and class members that they contained constituents which were a part of the vanilla plant and had those qualities associated therewith.

81. Defendant warranted such attributes to plaintiffs and class members, when this was not truthful and was misleading.

82. Defendant owed a special duty based on its responsibility as one of the largest grocery sellers in the nation.

83. The Products did not conform to their affirmations of fact and promises, wholly due to defendant's actions.

84. Plaintiff and class members relied on defendant's claims, paying more than they would have.

Fraud

85. Plaintiffs incorporates by references all preceding paragraphs.

86. Defendants purpose was to mislead consumers who increasingly seek products from upstart competitors which use real vanilla-derived ingredients in beverages.

87. Defendants' purpose was to highlight a wholesome and natural ingredient in a product category which has been trending downwards owing to awareness of the link between sugary soft drinks, obesity and numerous ailments.

88. Plaintiffs and class members observed and relied on defendant's claims, causing them to pay more than they would have, entitling them to damages.

Unjust Enrichment

89. Plaintiffs incorporates by references all preceding paragraphs.

90. Defendants obtained benefits and monies because the Products were not as represented and expected, to the detriment and impoverishment of plaintiff and class members,

who seek restitution and disgorgement of inequitably obtained profits.

Jury Demand and Prayer for Relief

Plaintiffs demands a jury trial on all issues.

WHEREFORE, plaintiff prays for judgment:

1. Declaring this a proper class action, certifying plaintiff(s) as representative and the undersigned as counsel for the class;
2. Entering preliminary and permanent injunctive relief by directing defendant to correct such practices to comply with the law;
3. Awarding monetary damages and interest, including treble and punitive damages, pursuant to the common law, GBL and ICFDBPA claims;
4. Awarding costs and expenses, including reasonable fees for plaintiffs' attorneys and experts; and
5. Such other and further relief as the Court deems just and proper.

Dated: February 7, 2019

Respectfully submitted,

Sheehan & Associates, P.C.
/s/Spencer Sheehan
Spencer Sheehan (SS-8533)
505 Northern Blvd., Suite 311
Great Neck, NY 11021
(516) 303-0552
spencer@spencersheehan.com

Levin-Epstein & Associates, P.C.
Joshua Levin-Epstein
1 Penn Plaza, Suite 2527
New York, NY 10119
(212) 792-0046

1:19-cv-00768
United States District Court
Eastern District of New York

Lashawn Sharpe and individually and on behalf of all others similarly situated

Plaintiff

- against -

A & W Concentrate Company and Keurig Dr Pepper Inc.

Defendant

Complaint

Sheehan & Associates, P.C.
505 Northern Blvd., #311
Great Neck, NY 11021
Tel: (516) 303-0052
Fax: (516) 234-7800

Pursuant to 22 NYCRR 130-1.1, the undersigned, an attorney admitted to practice in the courts of New York State, certifies that, upon information, and belief, formed after an inquiry reasonable under the circumstances, the contentions contained in the annexed documents are not frivolous.

Dated: February 7, 2019

/s/ Spencer Sheehan
Spencer Sheehan